PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 197046 KXR	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/NZ2003/000288	International Filing Date *(day/month/year)* 22 December 2003	Priority Date *(day/month/year)* 24 December 2002

International Patent Classification (IPC) or national classification and IPC

Int. Cl.[7] A23C 19/02, 19/05

Applicant

FONTERRA CO-OPERATIVE GROUP LIMITED et al

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

   I ☒ Basis of the report

   II ☐ Priority

   III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   IV ☐ Lack of unity of invention

   V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☐ Certain documents cited

   VII ☐ Certain defects in the international application

   VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of the report
22 July 2004	5 August 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **JAMIE TURNER** Telephone No. (02) 6283 2071

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/NZ2003/000288

Basis of the report

1. With regard to the **elements** of the international application:*

[X] the international application as originally filed.

[ ] the description, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of

[ ] the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of

[ ] the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of

[ ] the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

[ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[ ] the language of publication of the international application (under Rule 48.3(b)).

[ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

[ ] contained in the international application in written form.

[ ] filed together with the international application in computer readable form.

[ ] furnished subsequently to this Authority in written form.

[ ] furnished subsequently to this Authority in computer readable form.

[ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

[ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. [ ] The amendments have resulted in the cancellation of:

[ ] the description, pages

[ ] the claims, Nos.

[ ] the drawings, sheets/fig.

5. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/NZ2003/000288

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Statement

Novelty (N)	Claims	1-26	YES
	Claims		NO
Inventive step (IS)	Claims	1-26	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims		NO

Citations and explanations (Rule 70.7)

The claims of the present application relate, in their broadest sense, to a dried HY-MPC having 20-100% depletion of calcium. "HY-MPC" is a milk protein concentrate with denatured whey proteins. The HY-MPC can be used in cheese manufacture.

The following documents, first raised to in the corresponding International Search Report, are referred to as follows:

D1 – WO 2001/041578
D2 – US 6 139 901

Document D1 discloses a method of cheese manufacture which comprises dispersing in milk a dried milk protein concentrate or isolate having a high proportion of milk protein, coagulating the mixture with enzyme(s) to produce a curd and processing the curd to make cheese. The method is characterised by using a calcium depleted milk protein concentrate or isolate. This results in a nugget-free cheese.

Document D2 discloses a method of preparing a milk product comprising adjusting the pH of milk to 7.5 to 10.0, heating the milk to 60-90 C, cooling the milk and finally adjusting the pH back to 7.0 to 5.5. While the document does not expressly state that whey proteins are denatured, this would appear an inherent result of the process. The milk product has increased levels of protein and may be used in cheese manufacture.

Neither of the above documents disclose all of the features of the claimed invention. Hence, the claimed invention can be considered novel in the light of the prior art.

Both D1 and D2 are aimed at a milk product, such as a milk protein concentrate, having higher levels of protein. The preparation of an MPC having higher levels of protein is one of the aims of the present invention. However, it remains evident that the skilled person would not, as a matter of course, combine the teachings of each of D1 and D2 to arrive at an MPC the same as the claimed invention. Hence, in the absence of an obvious combination of D1 and D2, the claims can be considered to fulfil the requirements of inventive step.